THE IDENTITY OF VALENTINIA ILICIFOLIA SWARTZ

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THE ILICIOID CASEARIAS of Cuba have been studied recently by Fr. Marie-Victorin (Contrib. Inst. Bot. Univ. Montreal **49**: 19–56. 1944) who discussed the confusion existing between *Casearia ilicifolia* Vent. and *Valentinia ilicifolia* Sw. At that time Marie-Victorin did not have at his disposal information on the type specimens of these two species, nor the recent collections from Hispaniola which allow a more satisfactory description and disposition of these species.

The genus *Valentinia* was described by Swartz (Prod. 63. 1788 and Flor. Ind. Occ. **2**: 689–90, *t. 14*. 1800) based on descriptions and illustrations by Plumier (Cat. in add. 46. 1703, and ed. Burm. 160, *t. 167*. 1755) and Plukenet (Phytographie 196, *fig. 3*. 1691) as well as new material which Swartz illustrated. The genus contained one species, *Valentinia ilicifolia*. The genus and species were transferred to *Casearia* and placed in the section HEXANTHERAE by Bentham and Hooker (Gen. Pl. 1: 796. 1867). The section HEXANTHERAE of the genus *Casearia* had been established earlier by Endlicher (Gen. Pl. 917, 1840) for a single species, *Casearia ilicifolia* Ventenat. Endlicher had considered the Swartz genus *Valentinia* as of doubtful position. Bentham and Hooker, in referring *Valentinia* to *Casearia*, implied the identity of *Valentinia ilicifolia* Sw. and *Casearia ilicifolia* Vent. but did not specifically transfer the Swartz species. Eichler in 1871 [Flor. Bras. **13** (1): 462. 1871] cites *Valentinia ilicifolia* Sw. in synonymy with *Casearia ilicifolia* Vent. It appears, however, that Urban (Symbol. Ant. **8**: 446. 1920) was the first to publish the actual combination *Casearia ilicifolia* (Sw.) Vent. implied by the earlier workers and generally accepted in the literature today. Urban was in error in making or accepting such a combination, for *Casearia ilicifolia* Vent. and *Valentinia ilicifolia* Sw. are actually two distinct species although both belong to the genus *Casearia*. It should be noted here that Urban cited in synonymy with *Casearia ilicifolia* (Sw.) Vent., *Valentinia ilicifolia* Sw. as the basonym and also *Casearia comocladifolia* Vent.

Urban apparently recognized discordant elements in the original publication of *Valentinia ilicifolia* which Swartz had based on a Plumier reference and figure as well as material of his own. The Plumier figure was considered by Urban in several subsequent discussions. In 1919 (Fedde Rep. Spec. Nov. **15**: 403–4. 1919) he concluded Plumier's illustration could not be a *Malpighia* as Plumier had suggested and might possibly be an undescribed species of a different or possibly new genus but that it was not the same as *Valentinia ilicifolia* Sw. In his consideration of Plumier's life and writings in 1920 (Fedde Rep. Beih. **5**: 75. 1920) Urban continued to call the Plumier figure *Valentinia ilicifolia* Sw. but reported it as a tree of dubious affinities. Finally in 1922 (Fedde Rep. Spec. Nov. **18**: 365–6.

1922) Urban decided that the Plumier illustration was comparable to recently acquired herbarium specimens and these he described as *Sloanea ilicifolia* spec. nov. He cited in synonymy "V. ilicifolia Sw. quoad syn. Plum." Unfortunately Urban added to the confusion by using the same specific name and called this species *Sloanea ilicifolia*. We conclude that Urban did not intend to imply a new combination here as he referred the species *Valentinia ilicifolia* Sw., represented by the Swartz description and material, to *Casearia* in the same year.

Marie-Victorin, without access to the type specimens concluded it was difficult to determine what the Swartz species actually was and accepted Urban's disposal of the name *Valentinia ilicifolia* as a new combination in *Casearia*. We now have photographs of the type collections of *Valentinia ilicifolia* Sw. and *Casearia ilicifolia* Vent. In addition we have been aided by Dr. Ivan Johnston who examined the Swartz material of *Valentinia ilicifolia* in the British Museum.

The Swartz material is definitely a member of the genus *Casearia*. However, to transfer *Valentinia ilicifolia* Sw. to the genus *Casearia* as past workers have done would create a later homonym for *Casearia ilicifolia* Vent., a completely distinct species, hence a new name must be found. Gomez and Molinet recognized this transfer difficulty and created the name *Casearia Valentinia* for *Valentinia ilicifolia* Sw. (Gomez de la Maza, Flor de Cuba 33. 1887), however an earlier name is available. In 1803 Ventenat described a pubescent leafed Casearia which he called *C. ilicifolia* and a glabrous leafed species which he called *Casearia comocladifolia* (Choix de pl. 44. 1803). The latter was correctly recognized by Urban as identical with *Valentinia ilicifolia* Sw. and cited in synonymy when Urban referred the Swartz species to *Casearia* as *Casearia ilicifolia* (Sw.) Vent. (Symbol. Ant. **8**: 446. 1920). Marie-Victorin also accepts *C. comocladifolia* Vent. for the common glabrous, usually membranaceous ilicioid leafed Casearia of Hispaniola and Cuba; however, he did not recognize this was the same as *Valentinia ilicifolia* Sw. The correct nomenclature should be:

Casearia comocladifolia Vent. Choix de pl. 44. 1803.

Valentinia ilicifolia Sw. Prod. 63. 1788; Flor. Ind. Occ. **2**: 689–90, *t. 14*. 1800.

Casearia Valentinia Gomez and Molinet, Gomez de la Maza, Flor. de Cuba 33. 1887.

The pubescent leafed *Casearia ilicifolia* Vent. is well described and illustrated in the original publication (Choix de pl. 44. 1803), and is clearly distinct. This species was discovered by Turpin near Monte Cristi in Santo Domingo around 1800. Turpin himself did the illustration for Ventenat. It is clear from the original description that Ventenat was describing a new species and not transferring the earlier Swartz name to *Casearia* as Urban, Moscoso (Cat. Flor. Doming. 386. 1943), Gilg. (Nat. Pflanzenfam. ed. 2, **21**: 453. 1925) and others imply. The correct nomenclature for this species is:

Casearia ilicifolia Vent., Choix de pl. 44. 1803.

Samyda ilicifolia (Vent.) Poiret, Lam. Encycl. Suppl. **5**: 31. 1817.

The lack of any collections of this species since 1800 have handicapped most recent considerations of this problem. In 1946, the senior author relocated the species near Monte Cristi in the Dominican Republic. Additional material was collected in 1950 and it was determined that the species is abundant in restricted locations and has only been overlooked by past collectors in the dry thorn shrub vegetation around Monte Cristi. The following description of *Casearia ilicifolia* Vent. has been compiled from a field knowledge of this species and the additional collections cited below.

Caşearia ilicifolia Vent.

Spreading bushes 10 feet tall or trees 15–18 feet tall with trunk diameter averaging 4 inches at breast height. Branches occasionally geniculate and the youngest twigs densely pilose. Petioles 2–3.5 mm. long, densely pilose. Leaves oblong in outline, 5.5 × 3.0 to 7.0 × 3.0 cm. long and broad, coriaceous; apex truncate-emarginate tipped by two spines to slightly rounded; base truncate to truncate-cordate; margin strongly sinuate, spinose, the 10–13 lateral spines and ultimate leaf margins distinctly cartilaginous; primary veins 6–9 pairs, arcuate anastomosing near the margin with strong branch veins running into the spines; the blade lightly pubescent becoming glabrate and shining above, densely persistently pilose below. Flowering pedicels 3–4 mm. long; hypanthium 0.5 mm. long. Sepals 6, united at the base, pink, 6.5 × 2.3 to 7.5 × 3.5 mm. long and broad, densely short pilose outside, sparsely pubescent inside; corolla wanting; filaments and staminodes 8, thinly united at the base, the union 1.5 mm. long, the free portions of the filaments 2 mm. long, the free portions of the staminodes 1.5 mm. long, staminodes attenuate, filaments and staminodes sparsely short pilose, anthers affixed near the base, 1 mm. long; ovary globose, 3.0–3.5 mm. in diameter, short pilose above the middle, glabrous below, style 2.5–3.0 mm. long, sparsely short pilose, stigma capitate, 3-sided, apex depressed; fruiting pedicels 5–8 mm. long, the mature fruit a yellow-orange berry, depressed globose, 1 cm. in diameter, splitting along 3 lines, the pulp red, the seeds 4–8, yellow.

SPECIMENS SEEN:

DOMINICAN REPUBLIC: prov. Monte Cristi: Villa Isabella, *Howard 12520* (GH); Banks of the Rio Yaqui del Norte, south of Monte Cristi, *Howard 9570* (GH). Collected in flower and fruit in July and August.

Previous workers have been troubled by the earlier cited ranges of these species. Swartz, in the original publication of *Casearia comocladifolia* (*Valentinia ilicifolia* Sw.) gave the location as "habitat in sterilissimis petrosis Hispaniola, versus Oceanum. In Cuba circa Havanam." The species has never been relocated near Havana although collections are known from the Oriente Province of Cuba. In Hispaniola the current loca-

tions for this species are Gonaive Island and near Port au Prince in Haiti and near Barahona and Monte Cristi in the Dominican Republic. The Barahona location is a new record and is based on the collection *Howard 12599*. This was made from a 15 foot tree which had pink flowers which appeared while the plant was in full leaf. It was collected in flower in August and was growing in the thorn shrub area north of the town of Barahona.

Marie-Victorin refers both *Casearia ilicifolia* and *Casearia comocladifolia* to the section HEXANTHERAE DC which he emended. The primary character listed by Marie-Victorin is the production of flowers before the leaves appear. The two species considered here, which the senior author has seen in the field, may be leafless when flowering; may produce flowers on terminal leafless branches while the rest of the plant possesses leaves (*Howard 9570*), or may be in full leaf when flowering with the flowers hidden in the dense foliage (*Howard 12559*). The character of hysteranthous flowers as used by Marie-Victorin is not reliable.

The number of stamens in the species of the section HEXANTHERAE is also variable. Marie-Victorin distinguishes *Casearia comocladifolia* by having six stamens. However, Marie-Victorin's own dissections of a Gray Herbarium specimen of *Casearia comocladifolia* (*Wright 12*) with the open flowers spread on cards show flowers with six, seven and eight stamens and so indicated in Marie-Victorin's handwriting. The original plate given by Swartz in describing *Valentinia ilicifolia* shows eight stamens and the recent collections of this species from the Dominican Republic have most of the flowers with eight stamens, a few with seven and a very few with six stamens. Recent collections of *Casearia ilicifolia* also have flowers with eight stamens. The name of the section HEXANTHERAE is deceptive.

We can return now to a consideration of *Sloanea ilicifolia* Urban. In the original publication of this species Urban cited in synonymy "Valentinia ilicifolia Sw. quoad syn. Plum." In his citation of specimens Urban refers first to the Plumier figure and then to collections. No type was specifically selected. The original description is to a large extent based on a flowering specimen collected by Père Straessle at Morne Bellefontaine. All other specimens cited are indicated as sterile. The Straessle collection is presumably destroyed having been at Berlin. Only one of the other collections, *Leonard 3797a*, is available in this country.

In 1929 Urban and Ekman [Arkiv Bot. **22A** (17): 26. 1929] described a second species of *Sloanea* with ilicioid leaves which they called *Sloanea castor*. The distinctions between *Sloanea ilicifolia* and *Sloanea castor* do not seem reliable; the flowers and fruits are similar and the leaves of the two species show all intergradations in the material now available to us. Furthermore the ranges of the two entities coincide. It appears to us that *Sloanea castor* Urb. and Ekman must be reduced to synonymy with *Sloanea ilicifolia* Urb. An emended description of this species, based on the available collections, follows.

Sloanea ilicifolia Urban, Fedde Rep. Spec. Nov. **18**: 365. 1922.

Sloanea castor Urban and Ekman, Arkiv Bot. **22A** (17): 26. 1929.

Tree 15–20 m. tall. Branchlets with brown or grey-brown bark, scarcely striate to rough. Twigs more or less sulcate, scarcely to densely light brown puberulent. Leaves alternate to opposite, often clustered on many twigs towards the ends of the branchlets; stipules caducous, 3.5–4.5 mm. long, linear-lanceolate, light brown pubescent; petioles 3.0–12.0 mm. long, terete, scarcely incrassate at both ends, light brown puberulent; blade very variable in size and shape, 3.5 × 2.2 to 12.5 × 9.5 cm. long and wide, elliptic-lanceolate to broadly oval, stiff coriaceous, midrib and secondary veins impressed, scantily puberulent to glabrous above, prominent, puberulent to glabrous beneath, secondary veins 4 to 8, arcuate-ascending, generally terminating in a spine at the leaf margin, tertiary venation irregular, occasionally terminating in a marginal spine, base rounded to cordate, apex rounded to acute to short acuminate, the midrib prolonged into a spine, margin irregularly and deeply spinose dentate. Inflorescences axillary to leaf scars, one to several flowered; flowers 3.0–4.0 mm. long, about 4.0 mm. in diameter, sepals generally 6, to 3.0 mm. long, 0.5–1.25 mm. wide at the base, lanceolate-deltoid, obtuse, densely puberulent within and without; stamens 2.0–3.0 mm. long, filaments 1.5–2.0 mm. long, puberulent to pubescent, anthers 0.75–1.0 mm. long, deltoid, puberulent, dehiscing linearly most of their length, connective prolonged into a short knob above the anther sacs; pistil to 3.0 mm. long, ovary 1.0–2.0 mm. long, densely pubescent, indistinctly 4-angled, 4-loculed, gradually giving rise to the style, style often divided to the ovary to form two parts each of which may be divided again at the apex, pubescent at the base, glabrous above. Capsule brown, 1.5–1.75 cm. long, 1.25–1.5 cm. in diameter, subglobose to ellipsoidal, 1-loculed, 1–2-seeded, 3–4-valved; valves with velutinous outer surface densely covered with flexible spines; spines to 1.5 cm. long, densely antrorsely puberulent, straight, abruptly acute. Seeds enclosed almost completely in a deeply 3-lobed red aril which is firmly attached to the chalazal quarter of the seed.

SPECIMENS SEEN:

DOMINICAN REPUBLIC: Prov. of Barahona, Monteada Nueva, S.E. of Polo, alt. 3500 ft. *R. A. Howard 12355*, 50 ft. tree with small buttresses, d.b.h. 3 ft., fruit brown, Aug. 3, 1950 (GH); Prov. of Azua, Cordillera Central, Las Lagunas, 2250 ft., *E. L. Ekman H6366*, quite common tree, flowers past anthesis, July 13, 1926 (S).

HAITI: Vicinity of Mission, Fonds Varettes, alt. about 3000 ft., *E. C. Leonard 3797a* (CO-TYPE), occasional tree, steep wooded mountain slope, sterile, April 17–May 4, 1920 (NY, S); Massif de la Hotte, western group, Les Roseaux at Nan-Patates, 3000 ft. alt., *E. L. Ekman 10690* (TYPE of *S. castor*), common tree, in flower and fruit Sept. 17, 1928 (S, US); Massif de la Hotte, western group, Jeremie, Source-Cahouane, alt. 600 ft., *E. L.*

Ekman H10234, in fruit July 4, 1928 (S); Massif de la Hotte, western group, Torbee, La-Marie-Praux, alt. 2100 ft., *E. L. Ekman H5399*, sterile on Dec. 8, 1925 (S); Massif de la Selle, Morne Tranchaut, Fourcy, alt. 4620 ft., *E. L. Ekman H1285*, sterile on Aug. 4, 1924 (S); Massif du Nord, Port-de-Paix, high ridge of Haut Piton, alt. 3000 ft., *E. L. Ekman H3706*, sterile on April 6, 1925 (S); Petit Source, Morne de Commissaires, alt. 4560 ft., *L. R. Holdridge 1930*, tree 15 m. tall, d.b.h. 3 dm., in flower Sept. 1, 1944 (GH, US); Riviere Glace, alt. 2250 ft., *L. R. Holdridge 2219*, tree 20 m. tall, d.b.h. 3 dm., in flower and fruit Aug. 7, 1945 (US).

The figures given by Plumier and Plukenet agree with the specimens cited above.

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